

BRIDGING THE GAP BETWEEN POSTTRAUMATIC STRESS DISORDER RESEARCH AND CLINICAL PRACTICE: THE EXAMPLE OF EXPOSURE THERAPY

JOAN M. COOK

University of Pennsylvania and
Philadelphia VA Medical Center

PAULA P. SCHNURR

VA National Center for PTSD and
Dartmouth Medical School

EDNA B. FOA

University of Pennsylvania

There are notable challenges in translating empirically supported psychosocial treatments (ESTs) into general routine clinical practice. However, there may be additional unique dissemination and implementation obstacles for ESTs for trauma-related disorders. For example, despite considerable evidence from randomized clinical trials that attests to the efficacy of exposure therapy for posttraumatic stress disorder, front-line clinicians in real-world settings rarely use this treatment. Perceived and actual barriers that interfere with adoption include clinician misconceptions about what exposure entails and complex cases to which ESTs may not be readily applicable. Specific suggestions for bridging the

science-into-service gap in trauma ESTs (in general) and in exposure therapy (in particular) are proposed.

The difficulty in applying research findings to clinical practice outside an academic setting is not unique to the field of trauma treatment or to the arena of psychotherapy in general. Numerous other disciplines, including medicine, have also been faced with this dilemma (Sackett, Richardson, Rosenberg, & Haynes, 1997). One expectation underlying treatment research was that once effective treatments were discovered, they would easily be incorporated into community practice. Unfortunately, this has not been the case.

In the psychotherapy field, efforts to promote awareness and use of empirically supported treatments (ESTs) were spearheaded by the American Psychological Association's (APA) Task Force on Promotion and Dissemination of Psychological Procedures (1995; now known as the Committee on Science and Practice). Their mission was to define, identify, and disseminate information about ESTs (for a review, see Chambless & Ollendick, 2001).

The Task Force's endeavors and products initially led to highly polarized debates, in part over what constituted scientific evidence of treatment effectiveness—that is, the criteria for what made or did not make the list of ESTs—and the relevance of randomized clinical trials (RCTs) to clinical practice (Beutler, 2000; Persons & Silberschatz, 1998). The lines appeared to be largely drawn between researchers and other academics (including the Task Force), on the one hand, and

Joan M. Cook, Department of Psychiatry, University of Pennsylvania, and Department of Behavioral Health, Philadelphia VA Medical Center, Philadelphia, Pennsylvania; Paula P. Schnurr, Executive Division, VA National Center for PTSD, White River Junction, Vermont, and Department of Psychiatry, Dartmouth Medical School; Edna B. Foa, Department of Psychiatry, University of Pennsylvania.

Correspondence regarding this article should be addressed to Joan M. Cook, PhD, University of Pennsylvania, Treatment Research Center, 3900 Chestnut Street, Philadelphia, PA 19104. E-mail: cook_j@mail.trc.upenn.edu

practicing clinicians and more clinically oriented scholars, on the other (Bohart, O'Hara, & Leitner, 1998; Elliott, 1998; Garfield, 1996; Silverman, 1996).

Arguments in favor of promoting and disseminating ESTs include that these treatments improve patient care, bolster accountability, influence policy makers, foster better training, and encourage therapy research (for a summary, see Elliott, 1998). Further, Barlow (1996) advised that if the psychotherapy field does not communicate current knowledge regarding efficacious treatment, it runs the risk of psychological interventions not being included in practice guidelines.

The criticisms regarding evidence from randomized psychotherapy trials and the EST list are long. One of the most consistent critiques is that there is a disparity between the research samples produced by commonly used inclusion and exclusion criteria and the typical clinical samples found in real-world practice (Seligman, 1995). Other assertions include that these treatments promote adherence to single theoretical perspectives, overemphasize technique at the expense of theory, disregard the therapist's role in developing the treatment plan, and rely excessively on diagnostic classification rather than acknowledging the complex features often encountered in real-world clinical situations (Addis & Krasnow, 2000). Practitioners' hesitancy to employ ESTs or manual-based treatments appears to encompass several broad issues: (a) effects on the therapeutic relationship (e.g., use of ESTs will compromise or make it much harder to develop the therapeutic relationship); (b) unmet client needs (e.g., ESTs do not take into account individual client symptoms and problems); (c) therapist competence and job satisfaction (e.g., use of ESTs will be constraining or unfulfilling); (d) skepticism of treatment credibility (e.g., belief that psychotherapy is more an art than a science or belief that research cannot shed light on practice because the two are so different); (e) restriction of clinical innovation or autonomy (e.g., belief that ESTs will make practitioners like automatons or belief that ESTs will interfere with development of new theories and interventions); and (f) feasibility of treatments (e.g., belief that ESTs are too technical and disease specific or that learning an EST is too time-consuming or expensive; Addis, Wade, & Hatgis, 1999). Other practical challenges involve taking into account the time, length, and cost of training required to

learn EST and constraints on services, such as limited session frequency or intensity (Addis, 2002). Further potential impediments include malpractice concerns (e.g., belief that use of ESTs will make clinicians more susceptible to malpractice suits; Kovacs, 1996) as well as organizational and systems barriers. These impediments may include existing organizational power structures that do not support use of ESTs and established resource configurations or real and threatened resource shortages that do not pay for training, supervision, or consultation (Rosenheck, 2001).

To facilitate effective dissemination and implementation of ESTs, researchers need to address these frequently legitimate concerns of practitioners and patients in community clinical settings, including practitioner knowledge and attitudes in regard to ESTs (Addis et al., 1999). Some preliminary information about these issues has been obtained both directly, by examining practitioners' attitudes toward general psychotherapy manuals and ESTs (Addis & Krasnow, 2000; Najavits, Weiss, Shaw, & Dierberger, 2000), and indirectly, by surveying directors of psychology clinical training programs' attitudes toward training their students in ESTs (Crits-Christoph, Frank, Chambless, & Brody, 1995; Hays et al., 2002). In a survey of licensed psychologists randomly selected from the APA membership, Addis and Krasnow (2000) found that the majority gave little or no thought to the use of treatment manuals in clinical practice. The therapists in the Najavits et al. (2000) survey appeared better informed about and more willing to use manuals. These therapists, however, were largely recruited by word of mouth at an annual meeting of the Association for the Advancement of Behavior Therapy. Clearly, in this latter sample, composed largely of cognitive-behavioral therapists, manuals appear to enjoy much more widespread acceptance.

Both surveys of training directors found that a significant minority of programs do not routinely provide training and supervision in ESTs (Crits-Christoph et al., 1995; Hays et al., 2002). Reasons given by directors for this poor degree of teaching manualized treatment included lack of managed-care demands, flexibility in session limits, and perceived mismatch between client needs and treatment options (e.g., presenting issues needing treatment not addressed by ESTs; Hays et al., 2002).

Dissemination and Implementation of ESTs for Posttraumatic Stress Disorder (PTSD)

In 1999, the Expert Consensus Guideline Series on the Treatment of PTSD was published (Foa, Davidson, & Frances, 1999). Psychotherapy experts were in agreement that exposure therapy and cognitive therapy were the treatments of choice for PTSD. Shortly thereafter, the International Society for Traumatic Stress Studies (ISTSS) Task Force on PTSD Treatment Guidelines published an extensive review of the clinical and research literatures (Foa, Keane, & Friedman, 2000). The ISTSS guidelines cover a broad range of treatment approaches including cognitive-behavioral therapy (CBT), group therapy, psychodynamic therapy, inpatient treatment, hypnosis, and psychosocial rehabilitation. For each approach, the guidelines provide a description of the underlying theory and techniques, a summary of the literature including the general strength of evidence supporting its use, course of treatment, recommendations, and suggested readings.

It is not yet known how well front-line trauma therapists follow these practice guidelines or what treatments trauma therapists routinely utilize. Preliminary work in this area suggests that there is some adherence to these guidelines but plenty of room for improvement. In a survey of Department of Veterans Affairs (VA) clinicians treating PTSD patients, Rosen et al. (2004) asked how frequently clinicians used specific procedures recommended in the ISTSS practice guidelines. Psychotherapy practices most consistent with guideline recommendations included psychoeducation, coping-skills training, attendance to trust issues, and depression and substance-use screening. Practices for PTSD and trauma assessment, anger management, and sleep hygiene were less consistently used. These findings, however, may not be representative of VA practices nationwide or among non-VA clinicians in community practice, as this survey included clinicians at two academically affiliated VA medical centers (Palo Alto and San Francisco) with strong expertise in PTSD. Yet, they do show that even within centers widely known for their outstanding clinical practice, there is still departure from ISTSS guidelines. If these results are reflective of current VA practice nationwide, they strongly indicate that there is still considerable opportunity for change for the better. Moreover, it is even less likely that

trauma research advances have been widely transmitted to or adopted by non-VA community practitioners.

Before we can effectively engage in dissemination and implementation efforts, it is essential to determine the degree to which current PTSD practice patterns approximate published treatment guidelines. It is essential for the trauma field to empirically investigate the following questions: What are the current practices of front-line trauma clinicians? What proportion of practitioners is familiar with the ISTSS guidelines? What is practitioners' level of familiarity with the knowledge base on ESTs for trauma? What are practitioners' attitudes toward and pragmatic, economic, and philosophical concerns about guidelines and ESTs? What are the reasons why practitioners do not engage in guideline-concordant care for patients with PTSD (e.g., patient resistance, noncompliance, other competing symptoms or problems)?

This first step allows not only a better understanding of current practices but also identification of potential barriers and solutions to translation of research findings into clinical practice. If trauma practitioners have a gap in their knowledge base regarding evidence-based practice, ISTSS guidelines, and where to find treatment research articles or training in ESTs, it is imperative that educational initiatives be undertaken to educate practitioners about these areas. If lack of awareness is the reason why treatment guidelines are not more widely employed, this might require providing practitioners with copies or summaries of guidelines and lists of resources to educate them. If the poor level of adoption of published guidelines is occurring in large part because of attitudinal barriers, this would require finding out the reasons for resistance and systematically addressing those.

Barriers

One barrier to guideline-adherent PTSD treatment may be patient psychiatric comorbidities and life circumstances. In acknowledgement of practitioner concerns, Foa et al. (2000) noted that the intervention studies on which the ISTSS guidelines were based have inclusion and exclusion criteria that may limit their generalizability. In particular, exclusion criteria for these studies often eliminate clients with active substance dependence, acute suicidal ideation, neuropsychological

logical deficits, and cardiovascular disease. These comorbid conditions or concomitants may directly affect adherence to manualized treatment and thus clinical management. For example, if a trauma patient has acute suicidal ideation, inpatient treatment or crisis intervention may be the best initial approach. Alternatively, the presence of these other disorders or problems may indirectly affect treatment acceptability and adherence because they are associated with increased severity of PTSD symptoms, chronicity, functional impairment, or some combination of these.

However, just because individuals with these comorbid disorders were not included in many of the interventions studies completed thus far does not imply that the recommended ESTs will not be efficacious for patients with those co-occurring problems; a lack of supportive evidence for the use of these approaches does not constitute evidence that these treatments ought not be used (Shalev, Friedman, Foa, & Keane, 2000). To maximize the public health significance of ESTs, researchers need to design studies that contain effectiveness trials with greater generalizability or external validity (Hohmann & Shear, 2002). While researchers in the trauma field need to expand the scope of effectiveness trials as well as conduct more of them, it is important to note that many treatment studies of PTSD have very few exclusion criteria (e.g., Foa et al., 1999). In addition, several effectiveness trials of ESTs that were part of ISTSS recommended practices are currently underway (E. B. Foa, personal communication, May 21, 2003; P. P. Schnurr, personal communication, October 7, 2003; Riggs et al., 2003). These trials more closely represent real-world clinical practice by (a) broadening inclusion criteria; (b) including diversity and range of clinicians in terms of profession, expertise, and experience (e.g., including non-PhD-level therapists with no academic affiliations); and (c) utilizing assessment outcomes that include reduction of core psychiatric symptoms as well as optimization of function and minimization of disability.

Another barrier to guideline-adherent care may be that ESTs do not adequately address the full range of problems and life circumstances manifested by many clients with extensive trauma histories. Clients with a history of prolonged or repeated trauma often meet criteria for one or several Axis I and II diagnoses in addition to PTSD (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Yen et al., 2002; Zlotnik et al., 1996). In

addition, it is not unusual for their current life circumstances to include complicating factors such as domestic violence (Jones, Hughes, & Unterstaller, 2001), serious health problems (for a review, see Schnurr & Green, 2004), or homelessness (Fitzpatrick, LaGory, & Ritchey, 1999). In the ISTSS guidelines, Foa et al. (2000) noted that the PTSD diagnostic framework may in particular fail to do justice to the extensive range of symptoms frequently observed among survivors of severe trauma such as early childhood abuse. The authors concluded that those with extensive trauma histories may require interventions that focus primarily on dissociative symptoms, impulsivity, affect liability, somatization, interpersonal difficulties, or pathological changes in identity (Foa et al., 2000).

Despite these caveats, ESTs ought not to be dismissed out of hand. On the contrary, because there is empirical evidence supporting their efficacy, ESTs ought to be considered first-line treatments. Until systematic evaluations of psychiatric comorbid conditions (e.g., substance abuse, dissociation) or life problems are conducted, practitioners are advised not to automatically exclude use of recommended practices but to proceed, instead, with caution (Enns et al., 1998). However, there are some empirical data suggesting that CBTs that are effective with PTSD related to adult sexual and nonsexual assault are as effective in reducing PTSD and depression associated with childhood sexual abuse (Cahill, Yadin, et al., 2003). Instead of waiting for the research base on associated features or comorbidities to explicitly address the issue of complex symptom pictures in survivors of extensive trauma or entirely abandoning the use of ESTs in these cases, modification or adaptation of guidelines and treatments may be indicated.

Prolonged Exposure as an Example

In a comprehensive review of the literature on psychosocial interventions for PTSD, CBTs were found to be the most efficacious treatment approaches (Foa et al., 1999; Foa et al., 2000). Although CBT encompasses a range of techniques, the therapy most often studied in controlled trials applied across trauma populations is exposure therapy (for a review, see Rothbaum, Meadows, Resick, & Foy, 2000). Exposure therapy is a class of treatments that includes imaginal and in vivo confrontation with the traumatic memories and

TABLE 1. Potential Barriers to Use of Prolonged Exposure (PE) and Possible Solutions

	Barrier	Solution
For patients	Comorbidity (e.g., psychosis, bipolar disorder, major depression or substance abuse/dependence)	If other disorder(s) is primary or causes significant interference, focus on that problem(s) first and then reevaluate PTSD or use integrated approach (e.g., concurrent treatment of PTSD and cocaine dependence; Brady, Dansky, Back, Foa, & Carroll, 2001; Riggs et al., 2003).
	Suicidality	If imminent risk, use safety contract, crisis intervention, containment; when suicidality clearly subsides, consider PE.
	Dissociation	Use PE but introduce grounding techniques similar to those used in overengagement.
	Reluctance or unwillingness to engage in trauma memories	Acknowledge that exposure to trauma reminders is frightening but reassure that PE is effective and safe; convey effectiveness of PE and competence in its delivery. If this does not work, note a caveat: never force unwilling clients to do exposure.
	Nonattendance/premature dropout	Get patients ready and motivated to engage in treatment (e.g., supplement with motivation enhancement). Note: do not spend too many sessions on these issues or patients are likely to disengage and dropout.
	Inability to image or poor cognitive functioning	Substitute imaginal exposure with another way of organizing and processing the traumatic memory (such as writing) and use in vivo exposure.
	Unresolved life crises or problems (e.g., loss of job, homelessness)	If careful pretreatment assessment has determined that PTSD is primary, conduct PE; align with patient desire to get well; communicate firm and strong belief in PE helping patient get well; praise every healthy coping and treatment adherence; and periodically reassess other areas.
	Poor physical health (e.g., disorders of the circulatory system)	Consult medical opinion as to whether PE is contraindicated; if not, proceed with PE.
	Excessive shame or guilt	Studies show that PE also reduces depression, anger, sadness, and guilt.
	Belief that treatment will lead to increase in symptoms or problems	Discuss any concerns or questions; "sell" the rationale.
	Extreme anger	1. Validate patient feelings; express empathy; discuss how anger can be an obstacle; review rationale; and suggest that patient focus on anxiety reactions rather than anger. 2. Consider shift of focus to in vivo exposure and processing/cognitive therapy.
	Emotional numbing (underengagement)	Prompt for more details of what happened and what person is thinking, feeling, or sensing.
	Overengagement	Allow for short breaks during session for patient to slow down breathing and focus on the present; memories are told with eyes open in past tense and in a form of a dialogue with the therapist.
	Severe flashbacks or distress during exposure	Advise patient to keep eyes open; use past tense in retelling; and make eye contact and converse while retelling. Therapist provides grounding comments (e.g., "You are safe here").
	Fear of loss of control	Help the patient to be in and feel control by reassuring and praising.
	Past nonadherence problems	Show or give a testimonial to benefits of PE (e.g., view Dateline videotape, or therapist or peer endorsement of PE).
	Desire to drop out of treatment	Remind the patient that avoidance is the main reason for his or her chronic symptoms and that anxiety decreases with exposure.
	Perpetrators of harm	Do not use PE for PTSD related to memories of the perpetration.
For practitioners	Limited or no training	Participate in an intensive 4–5 day workshop followed by case supervision and consultation in which accurate information about obstacles and solutions is presented, including opportunities to view videotapes of experienced PE therapists; become equipped to deal more effectively with comorbid conditions.
	Low credibility/confidence in treatment	Foster a realistic perception that PE will result in desirable consequences by providing "proof" (i.e., summary of empirical evidence, testimonials from PE patients and therapists).

TABLE 1. (continued)

	Barrier	Solution
For practitioners	Low affect tolerance	Accept the rationale of PE (i.e., memories will not hurt us and we will habituate to the memory); remind yourself that although this is painful work, it is most of the time very beneficial; remember that surgeons cause temporary pain in order to increase long-term quality of life; and develop supportive professional network of peers.
	Past failure experience	Consult with an expert; studies show that over 90% of patients show clinically significant improvement.
	Belief that patients will decompensate	Remember that there is no scientific evidence that patients get worse after PE; case reports of worsening did not use the PE protocol.
	Belief that treatment is revictimizing	Remember that the patient is already distressed and that assisting patients in emotional processing through PE will reduce long-term distress.
	Do not understand or agree with rationale behind PE	Consult an expert in PE.
	Concerned that PE will have a negative effect on therapeutic relationship	Remember that in clinical trials, PE is not associated with a higher dropout rate and that the majority of patients are willing to engage in this form of treatment. Most patients praise PE at the end of treatment.
	Belief that PE requires too much time in terms of session frequency and duration	Remember that the average PE patient achieves excellent reduction in PTSD, depression, and anxiety in ten 90-min sessions; this amounts to a total of 15 hr, which can be delivered once or twice weekly; PE is a very short treatment.
	Belief that PE reduces patient autonomy by "forcing" patient to recall trauma	Both (a) overcoming avoidance and (b) emotional processing of the memory are associated with recovery from PTSD; remember in the long run, PE empowers patients to be in charge of their memories rather than having their memories control them.
	Belief that PE does not allow patient to recover at own pace	Remember that these patients have not recovered when left to their own pace; some have suffered from PTSD over 30 years before they received PE.
	Belief that PE can only be applied to survivors of discrete or single-incident traumas	Studies show that survivors of child sexual abuse occurring over years as well as veterans of wars who had experienced multiple traumas benefit from PE as much as survivors of single traumas. On occasion they require several additional sessions.

Note. PTSD = posttraumatic stress disorder.

with situations that are avoided because they are trauma reminders. Of these variations, *prolonged exposure* (PE) is the program that has been most widely assessed and strongly validated in various clinics as efficacious for symptoms related to a variety of types of traumas (Foa, Rothbaum, & Furr, 2003; Rothbaum et al., 2000).

PE consists of four components: psychoeducation, breathing retraining, imaginal exposure, and in vivo exposure (Foa & Rothbaum, 1998). PE is typically administered in from nine to twelve 90-min sessions once or twice weekly. The first session consists of presentation of the overall treatment rationale and goals, description of the treatment procedures, and discussion about the traumatic event(s) that is most disturbing to patients as judged by the reexperiencing and avoidance symptoms. The treatment is described as

including two exposure procedures: imaginal exposure and in vivo exposure. In imaginal exposure, patients are asked to close their eyes and recount the traumatic experiences in the present tense for 30–60 min, including giving a detailed description of the event as well as a description of their thoughts and feelings about it. In vivo exposure involves identifying situations or objects that are fear evoking because they are related to the trauma but are inherently safe (e.g., for motor vehicle accident survivors, driving or riding in a car). These situations are arranged in a hierarchy according to how much distress they evoke. The patients are then asked to confront the situations systematically, beginning with those that evoke moderate fear and advancing to more fear-evoking situations.

The rationale for imaginal exposure is that it

promotes emotional processing of trauma by (a) allowing patients to revisit the details of the traumatic event and gain new perspectives (e.g., "the rape was not my fault" or "I did the best under the circumstances"); (b) sharpening the distinction between remembering and reencountering the traumatic event and thus the realization that the latter but not the former is dangerous; (c) helping patients create a coherent, organized narrative of the traumatic event; (d) demonstrating to patients that emotional engagement with the traumatic memory results in reduction rather than increase in anxiety; and (e) increasing patients' sense of mastery. In vivo exposure provides patients with corrective information that the avoided trauma-related situations are not dangerous. Thus, their anxiety decreases, increasing sense of mastery and broadening positive life experiences. When implementing this approach, it is particularly important to promote emotional engagement with the traumatic memory and to select situations that will demonstrate safety (Foa & Cahill, 2002). A more detailed conceptual theory for the mechanism of action is presented in Foa and Kozak (1986) and further elaborated by Foa and Rothbaum (1998).

Despite evidence supporting its efficacy, exposure, like other CBTs, is not yet widely used (Becker, Zayfert, & Anderson, 2004; Fontana, Rosenheck, Spencer, & Gray, 2002; Rosen et al., 2004). Becker et al. (2004) assessed licensed psychologists' use of imaginal exposure for PTSD and their perceived barriers to its implementation. Although approximately half reported that they were at least somewhat familiar with exposure for PTSD, only a small minority used it in clinical practice. Similarly, less than one quarter of VA clinicians surveyed routinely utilized it (Rosen et al., 2004).

Factors hypothesized to account for why exposure is not more widely utilized include patients' trauma history and other personal characteristics, therapist concerns, and treatment-environment factors (Becker et al., 2004; Foy et al., 1996; Hembree, Rauch, & Foa, 2003; Jaycox & Foa, 1996; Litz, 2002). For a summary of potential barriers to the use of PE and possible solutions, see Table 1. Patient factors that represent obstacles to the use of exposure include the coexistence of other prominent psychological impairments (e.g., comorbidity involving extreme impulsivity, suicidality, or dissociation), concurrent personality or substance-abuse disorder, treat-

ment noncompliance, inability to image, unresolved life crises, or other pressing problems such as homelessness, unwillingness to divulge, and poor physical health (Litz, 2002). Hypothesized clinician barriers include lack of training, low confidence in effective delivery, low affect tolerance, and past failure experiences (Litz, 2002). Additionally, clinicians may view exposing patients to their traumas as revictimizing or may be afraid that patients will decompensate (Rothbaum & Schwartz, 2002; Zayfert, Becker, & Gillock, 2002). Last, if patients exhibit any signs of increased anxiety or distress, exposure therapy may be discontinued for fear of doing more harm than good (Rothbaum & Schwartz, 2002).

Although there is general discussion about the potential barriers to utilization of exposure, it is unclear which barriers have the greatest effect on utilization. Some preliminary work has been done in this area by Becker et al. (2004). In a mail survey, psychologists endorsed what they viewed as numerous contraindications to using imaginal exposure (Becker et al., 2004). Severe suicidality, homicidality, dissociation, and any comorbid disorder were frequently endorsed as factors that dissuaded therapists from employing imaginal exposure. Respondents also indicated that they were concerned that the use of imaginal exposure would be likely to lead to an increase in symptoms or problems such as substance abuse and premature termination of therapy. Psychologists' perceptions did not vary according to training, familiarity with exposure, or theoretical orientation.

Two long-term solutions to these problems are to engage in more systematic evaluation of contraindications and to address clinician concerns. Most barriers listed above are not based on empirical evidence and thus require further investigation. More systematic information is needed about what factors determine whether practitioners will use PE. These would include, for example, the knowledge-based, attitudinal, practical, and systemic factors that impede and promote the use of exposure. Identifying barriers to and facilitators of the use of exposure would constitute a crucial first step toward promoting higher utilization of this EST.

Addressing Barriers to PE

In the absence of empirical evidence on the factors that impede and promote use of exposure, how can we promote the incorporation of expo-

sure research findings into trauma treatment planning and delivery? One way is to address the types of patient and practitioner concerns and misconceptions identified above. Another is to discuss modification of this approach to allow for more effective delivery (see Table 1).

Some fears about the risks of exposure therapy for PTSD appear to be both widespread (Becker et al., 2004) and unfounded (Rothbaum & Schwartz, 2002). These common misperceptions regarding exposure may contribute to patients' or clinicians' reluctance to engage in this efficacious treatment. Clinicians and researchers must work together as a community to help correct these misapprehensions.

On one hand, it is important to acknowledge that PE is not appropriate for all patients (Foa, Zoellner, Feeny, Hembree, & Alvarez-Conrad, 2002) and may be particularly difficult to deliver for some populations (e.g., veterans with chronic, combat-related PTSD). This latter assumption, however, ought to be qualified on the basis of results from 10 Israeli veterans with chronic PTSD who are the first to be enrolled in an ongoing study of PE. These veterans had a 58% mean reduction of symptoms after treatment with PE (Nacasch et al., 2003). At present, PE has been delivered to 25 veterans with the same degree of success (Nacasch, personal communication, December 15, 2003).

On the other hand, it needs to be communicated that exposure therapy is suitable for a broader spectrum of clients with PTSD than is reflected in investigations of current practice patterns. Frueh, Mirabella, and Turner (1995) advised clinicians to not automatically exclude all patients who have a perceived contraindication from exposure therapy. Although the principle of *primum non nocere* ("first do no harm") may be well-intentioned, an overly broad interpretation of this standard may actually be harmful to the patient. When appropriately conducted, great care is taken to facilitate the effective delivery of this therapy; the rigors of exposure are tempered by empathy and a collaborative therapeutic alliance.

Nevertheless, misguided sympathy on the part of well-intentioned therapists may actually reinforce the patient avoidance of trauma material and impede emotional processing (Rothbaum & Schwartz, 2002). Although patient preference is important in clinical decision-making and probably affects service utilization and adherence, cli-

nicians ought not to be reinforcing patients' maladaptive avoidance. In our experience, rarely do patients enter treatment saying, "I want to retell my trauma over and over again," but most patients tell us subsequent to treatment that this was a key ingredient in their attainment of symptom reduction.

There have been concerns that imaginal exposure may cause symptom exacerbation leading to premature termination. However, in a sample of 76 women with chronic PTSD who underwent treatment with PE, only about 10% experienced a temporary PTSD symptom exacerbation, and this was unrelated to outcome or dropout (Foa et al., 2002). Moreover, in several studies that compared PE with other treatments, not a single PE patient ($N = 75$) showed an increase in PTSD symptoms at the end of treatment, while 3 out of 39 patients treated with another form of CBT did (Cahill, Riggs, Rauch, & Foa, 2003; Foa, Davidson, & Frances, 1999). Additionally, in a review of 25 controlled studies of CBT for PTSD, no difference was found in dropout rates among exposure and other CBTs, suggesting that PE is not less tolerable than alternate CBT approaches (Hembree, Foa, et al., 2003).

It is possible that there are empirically minded clinicians who may have tried to use exposure in their practice without formal training, whose patients may have been reluctant or hesitant or who may have experienced symptom exacerbation after their first exposure session, leading the therapist to abandon the approach. What this may have taught the clinician is to avoid this effective form of treatment. Empirical data suggest that clinicians ought to persist in the delivery of PE even if temporary increase in symptoms is observed. This temporary increase may reflect emotional engagement with the traumatic material, which is a positive predictor for successful outcome. In a small minority of cases, where overengagement is observed, modification of the protocol is suggested (see Hembree, Rauch, & Foa, 2003). Just as safely approaching traumatic memories can build mastery and competence in PTSD patients, so can safely conducting exposure therapy build clinicians' confidence and mastery. If clinicians are adequately trained, feel competent, and believe in the credibility of exposure, we believe they are more apt to effectively deliver this intervention.

Overall, we strongly believe that one of the most important issues accounting for the underutilization of PE is the relative scarcity of training

in its delivery. Though we have not formally surveyed all the clinicians we have trained in the past, we have informally found that people who have been intensively trained and supervised by us on how to use PE often go on to use this approach consistently in clinical practice. We further believe that much of the training conducted in the use of PE is insufficient because of time and cost issues. In our experience, PE requires a 4–5-day training workshop and ought to be supplemented with supervision and consultation with colleagues who have expertise in PE (for details, see Cahill, Hembree, & Foa, *in press*).

Although there are temporary difficulties in some patients who undergo PE, they are vastly fewer than clinicians and patients might think. In most cases, these difficulties can be overcome with adjustments in dosing and slight modification in treatment procedures (Hembree, Rauch, & Foa, 2003). For example, three actual barriers to successful implementation of PE include extreme anger, emotional numbing (underengagement), and intense anxiety or overengagement. Several minor procedural modifications have been suggested to facilitate effective and safe implementation of exposure in these cases without loss of the key ingredient of emotional engagement with traumatic memory (for a more detailed discussion of these procedures, see Hembree, Rauch, & Foa, 2003; Jaycox & Foa, 1996). In brief, when patients are excessively fearful or avoidant, it is advisable to discuss any concerns or questions they have regarding the treatment. It is important to validate the anger patients feel and empathize with them, but at the same time to suggest that anger ought to be put on the back burner until unrealistic anxiety and avoidance are addressed. If a person is having excessive numbing or avoiding engagement, common procedural alterations include promotion of more details of what happened and what the patient is thinking, feeling, and sensing. If a patient has severe flashbacks or distress during exposure, therapist modifications may include encouraging patients to keep eyes open and use the past tense while retelling a situation, making eye contact with patients, and conversing with them as they are retelling the trauma as well as providing grounding comments. Notably, clinical experience strongly indicates that the number of patients who show underengagement by far exceeds that of overengagers. After all, the theory underlying PE proposes that PTSD results from excessive cognitive and behavioral avoid-

ance (Foa & Cahill, 2001); PTSD sufferers, being experts in avoidance strategies, are more likely to “protect” themselves by not engaging emotionally with their traumatic memories than overengage and thus “fall apart.”

However, adaptations, such as shortening exposures, may further sensitize patients and exacerbate rather than ameliorate their fears (Rothbaum & Schwartz, 2002). Although there is validation and consideration of a patient’s judgment regarding pacing and selection of the targets of therapy (Hembree, Rauch, & Foa, 2003), it is advisable not to abandon exposure altogether. Adaptations may be needed, but it is not good practice to combine interventions haphazardly without a unifying framework.

To date, the supplementation of exposure with other CBTs has generally not shown any additional therapeutic benefit (for a review, see Foa et al., 2003). Another unsuccessful example was the use of family therapy to augment exposure for veterans with combat-related PTSD (Glynn et al., 1999). Behavioral family therapy (Mueser & Glynn, 1995) did not significantly contribute to a reduction in PTSD symptoms above and beyond exposure therapy.

Becker and Zayfert (2001) used a systematic and empirically grounded approach to exposure-treatment research in a real-world clinical setting. They have been actively finding ways to address the needs of patients who are considered to be poor candidates for exposure through several means: (a) flexible application of manualized exposure therapy, (b) the use of a CBT group designed to increase commitment and adherence to exposure therapy, and (c) the integration of dialectical behavior therapy (Linehan, 1993) with exposure therapy. Anecdotally, they have found that DBT seemed to improve both patient and provider tolerance of exposure.

This work is to be encouraged as an attempt to bridge the gap between research and clinical implementation of ESTs for PTSD. However, we do not yet know whether Becker and Zayfert’s (2001) strategy is more effective in symptom reduction or whether the alterations they propose result in more successful engagement and retention of patients in treatment than unmodified PE. Whether augmenting PE with this approach or others (e.g., Cloitre, Koenen, Cohen, & Han, 2002) increases patients’ ability to tolerate and benefit from exposure calls for systematic evaluation. Though being responsive to clinician and

patient concerns is important, we do not yet have evidence that an eclectic mix of evidence-based approaches will be more effective than a stricter adherence to manualized intervention (Gonzales, Ringeisen, & Chambers, 2002). This is an issue that needs to be carefully examined, as we do not want to dilute key ingredients of exposure therapy that are crucial to successful outcomes. Moreover, adding treatment sessions ostensibly to prepare patients for PE lengthens the overall treatment program, which may result in patients dropping out before they have had the opportunity to receive treatment that effectively reduced their PTSD symptoms. In addition, complicated treatment protocols are less likely to be successfully disseminated than relatively simpler protocols such as PE. Indeed, in other areas of psychotherapy research, some have found that too much adaptation in delivery of ESTs can be disadvantageous (Schulte, Kunzel, Pepping, & Schulte-Bahrenberg, 1992).

Bridging Science Into Service in PTSD Treatments

There is no one way of successfully bridging the gap between research on ESTs for trauma and PTSD and their utilization in real-world practice. The medical literature is filled with studies showing how difficult it is to bring science into service and change provider practice (for a review, see Davis et al., 1999). Traditional means of accomplishing this (e.g., educational materials and formal, planned CE activities or programs), when employed without enabling or practice-reinforcing strategies, have relatively little impact in getting providers to modify their practice patterns (Davis et al., 1999). Community-based strategies (e.g., outreach visits such as academic detailing, opinion leaders, and patient-mediated strategies), practice-linked interventions (e.g., audit and feedback, reminders), and multiple interventions appeared to be the most effective methods for encouraging practitioners to adopt empirically validated interventions (Davis et al., 1999).

Until more empirical information is available on how to successfully disseminate and implement ESTs, what can we do? In this interim, we can be guided by theory, practicality, and innovation. Our first goal as a community of trauma therapy researchers and practitioners is to remind ourselves that we have a mutual objective, which

is to provide patients with the best possible care. If we remain "silos of intervention that have little relationship to each other" (Bickman, 2002, p. 196), our patients are much less likely to benefit from the efforts of either researchers or practitioners. We all have an ethical and professional responsibility to work cooperatively toward bridging this gap.

Although treatment-manual development and dissemination is one way to join science and service (Addis, 1997, 2002), this is not seen as sufficient (Henggeler & Schoenwald, 2002). Disseminating ESTs through manuals can be viewed as a top-down process. Fensterheim and Raw (1996) remarked on this by suggesting that the researcher-practitioner relationship is often framed as one of the researcher as conceiver of ideas and solutions and the clinician as executer of the researcher's findings. One of the most powerful ways to bridge the research-practice gap may be to move from this predominately hierarchical and unidirectional model of transmission of knowledge to a more egalitarian and bidirectional approach (Addis & Hatgis, 2000). Rather than researchers transmitting information to practitioners, there ought to be a cross-fertilization of ideas and solutions between these two groups (Hatgis et al., 2001). To accelerate the pace of science into service, we need to promote shared responsibility for building trauma research-practice cross-fertilizations or partnerships. There needs to be an increased recognition on both sides that we have shared and unique knowledge and could greatly benefit from a bidirectional flow of information and ideas.

Practitioners need to see themselves as stakeholders and actively seek to join research endeavors as consultants. This can include having researchers partner with front-line clinicians early in manual development in hopes that this will lead to more valid and user-friendly manuals (Addis, 2002). In addition, researchers can ask clinicians to generate concerns about using manual-based treatments (Addis & Hatgis, 2000). Researchers must understand that clinicians have a host of competing demands (such as increasing case loads and productivity monitoring) that may limit their ability to change their practice patterns (Bickman, 2002). Chorpita (2002) suggested that if we want our manuals to be used in community clinical practice, we ought to be designing, implementing, and testing them in community clinical practice settings.

One innovative example for facilitating psychotherapy research in a real-world setting is the development and implementation of practice-research networks, such as the Pennsylvania Practice Research Network (Borkovec, Echemendia, Ragusea, & Ruiz, 2001). This science and service collaboration was designed to maximize internal and external validity of psychotherapy trials.

Another strategy for bridging the science-practice gap is to build a knowledge base about how trauma research is transmitted and translated for clinical use in community settings. Researchers and clinicians can provide best-practice examples of how programs adopt ESTs, including what worked and what didn't work (e.g., Mueser, Torrey, Lynde, Singer, & Drake, 2003; see Cahill, Hembree, & Foa, *in press*, for examples of real-world settings implementing PE).

One explanation for the poor translation of empirical findings into practice is that "researchers write for other researchers and not for clinicians" (Fensterheim & Raw, 1996, p. 168). Researchers may want to consider synthesizing and communicating findings in ways that are understandable and relevant to practitioners by, for example, including practical applications and advice (e.g., procedural details).

On the basis of an in-depth review of three successful instances of dissemination and implementation of psychosocial interventions (i.e., the Behavioral Analysis and Modification Project, the Teaching Family Model for group home treatment of deviant adolescents, and the Fairweather Hospital-Community Treatment Program), Backer, Liberman, and Kuehnel (1986) made suggestions for integrating ESTs into real-world practice settings. Effective strategies for accomplishing this included interpersonal contact between front-line clinicians and those knowledgeable about the treatments, outside consultation on the adoption process, organizational support for treatment, persistent championship by agency staff, adaptability of the innovation, and availability of credible evidence of success (Backer et al., 1986). These appear to be consistent with findings derived from review of interventions in other fields (Rogers, 1995).

Practitioners' attitudes toward implementing new treatments may be formed largely by discussion with colleagues rather than direct experience with the treatment (Addis & Krasnow, 2000; Rogers, 1995). Rogers (1995) suggested several

strategies for getting innovation to reach critical mass: (a) target highly respected individuals in a system's hierarchy for adoption, (b) shape individuals' perceptions by implying that the innovation is inevitable and desirable and that the critical mass has already started, (c) introduce it to intact groups in a system where members are likely to be more innovative, and (d) provide incentives for early adoption.

Professional associations like ISTSS and the International Society for the Study of Dissociation (ISSD) can strengthen collaboration and communication by convening researchers and practitioners in conferences and meetings. Additionally, these associations can help lobby for infrastructure support and incentives to encourage dissemination and implementation of best practices. We can also lobby the trauma associations to which we belong to annually publish summaries of funded interventions shown to be effective or provide a central clearinghouse to evaluate new treatments.

We encourage practitioners to seek training to learn how to implement ESTs for trauma (in particular, PE) and to communicate their needs as well as the needs of their patients to researchers in order to influence research questions. Researchers are encouraged to engage in community-based participatory research, be respectful and inclusive of provider and patient needs and preferences, take these into account in their studies, and integrate dissemination into design of intervention studies.

To optimize internal and external validity of psychotherapy research, Ten Have, Coyne, Salzer, and Katz (2003) proposed enhancing the randomized clinical trials with several different designs (i.e., partial patient-provider preference designs, randomized encouragement and consent designs, fixed-adaptive design, and random between- and within-patient adaptive designs). These enhanced designs may augment patient recruitment and adherence in psychiatric intervention studies, thus bringing the results more in line with real-world clinical practice. Others have proposed tool kits that include integrated written material, Web-based resources, training experiences, and consultation opportunities (Torrey et al., 2001).

Future Directions

What we may be struggling with in the trauma field is how to treat patients who suffer from

numerous Axis I and II disorders and who have a myriad of life problems, including difficulties with emotion regulation and interpersonal-skills deficits. Indeed, there are some clinical situations for which little or no scientific evidence regarding efficacious treatment approaches exists. Notably, however, attempts to find predictors for failure to benefit from PE have largely failed because some patients with "complex PTSD" (i.e., patients with comorbid Axis I and II disorders other than psychotic disorders; Roth, Newman, Pelcovitz, Van der Kolk, & Mandel, 1997) also benefit from the treatment. Preliminary results suggest that patients with comorbid alcohol and drug abuse or dependence can benefit from PE when it is delivered simultaneously with treatment that addresses substance abuse (Riggs et al., 2003). Nevertheless, more studies that address the generalizability of available ESTs are warranted. In the meantime, we still need to draw on evidence-based practice. Just as the EST list is not final and definitive, neither are the practice guidelines for PTSD.

References

- ADDIS, M. E. (1997). Evaluating the treatment manual as a means of disseminating empirically validated psychotherapies. *Clinical Psychology: Science and Practice*, 4, 1-11.
- ADDIS, M. E. (2002). Implicit and untested assumptions about the role of psychotherapy treatment manuals in evidence-based mental health practice. *Clinical Psychology: Science and Practice*, 9, 421-424.
- ADDIS, M. E., & HATGIS, C. (2000). Values, practices, and the utilization of empirical critiques in the clinical triad. *Clinical Psychology: Science and Practice*, 7, 120-124.
- ADDIS, M. E., & KRASNOW, A. D. (2000). A national survey of practicing psychologists' attitudes toward psychotherapy treatment manuals. *Journal of Consulting and Clinical Psychology*, 68, 331-339.
- ADDIS, M. E., WADE, W. A., & HATGIS, C. (1999). Barriers to dissemination of evidence-based practices: Addressing practitioners' concerns about manual-based psychotherapies. *Clinical Psychology: Science and Practice*, 6, 430-441.
- American Psychological Association Task Force on Promotion and Dissemination of Psychological Procedures. (1995). Training in and dissemination of empirically-validated psychological treatments: Report and recommendations. *Clinical Psychologist*, 48, 3-23.
- BACKER, T. E., LIBERMAN, R. P., & KUEHNEL, T. G. (1986). Dissemination and adoption of innovative psychosocial interventions. *Journal of Consulting and Clinical Psychology*, 54, 111-118.
- BARLOW, D. H. (1996). The effectiveness of psychotherapy: Science and policy. *Clinical Psychology: Science and Practice*, 3, 236-240.
- BECKER, C. B., & ZAYFERT, C. (2001). Integrating DBT-based techniques and concepts to facilitate exposure treatment for PTSD. *Cognitive and Behavioral Practice*, 8, 107-122.
- BECKER, C. B., ZAYFERT, C., & ANDERSON, E. (2004). A survey of psychologists' attitudes towards and utilization of exposure therapy for PTSD. *Behaviour Research and Therapy*, 42, 277-292.
- BEUTLER, L. E. (2000). David and Goliath: When empirical and clinical standards of practice meet. *American Psychologist*, 55, 997-1007.
- BICKMAN, L. (2002). The death of treatment as usual: An excellent first step on a long road. *Clinical Psychology: Science and Practice*, 9, 195-199.
- BOHART, A. C., O'HARA, M., & LEITNER, L. M. (1998). Empirically violated treatments: Disenfranchisement of humanistic and other psychotherapies. *Psychotherapy Research*, 8, 141-157.
- BORKOVEC, T. D., EICHEMENDIA, R. J., RAGUSEA, S. A., & RUIZ, M. (2001). The Pennsylvania Practice Research Network and future possibilities for clinically meaningful and scientifically rigorous psychotherapy effectiveness research. *Clinical Psychology: Science and Practice*, 8, 155-167.
- BRADY, K. T., DANSKY, B. S., BACK, S. E., FOA, E. B., & CARROLL, K. M. (2001). Exposure therapy in the treatment of PTSD among cocaine-dependent individuals: Preliminary findings. *Journal of Substance Abuse Treatment*, 21, 47-54.
- CAHILL, S. P., HEMBREE, E. A., & FOA, E. B. (in press). Dissemination of prolonged exposure therapy for posttraumatic stress disorder: Successes and challenges. In Y. Neria, R. Gross, R. Marshall, & E. Susser (Eds.), *9/11: Public health in the wake of terrorist attacks*. Cambridge, England: Cambridge University Press.
- CAHILL, S. P., RIGGS, D. S., RAUCH, S. A. M., & FOA, E. B. (2003, March). Does prolonged exposure therapy for PTSD make people worse? Poster session presented at the Annual Meeting of the Anxiety Disorders Association of America. Toronto, Ontario, Canada.
- CAHILL, S. P., YADIN, E., HEMBREE, E. A., MULLER, K., RAUCH, S. A. M., & FOA, E. B. (2003, November). Treatment outcome across assault types: Adult physical and sexual assault and childhood sexual abuse. Paper presented at the Annual Meeting of the International Society for Traumatic Stress Studies, Chicago, IL.
- CHAMBLESS, D. L., & OLLENDICK, T. H. (2001). Empirically supported psychological interventions: Controversies and evidence. *Annual Review of Psychology*, 52, 685-716.
- CHORPITA, B. F. (2002). Treatment manuals for the real world: Where do we build them. *Clinical Psychology: Science and Practice*, 9, 431-433.
- CLOITRE, M., KOENEN, K. C., COHEN, L. R., & HAN, H. (2002). Skills training in affective and interpersonal regulation followed by exposure: A phase-based treatment for PTSD related to childhood abuse. *Journal of Consulting and Clinical Psychology*, 70, 1067-1074.
- CRITS-CHRISTOPH, P., FRANK, E., CHAMBLESS, D. L., & BRODY, C. (1995). Training in empirically validated treatments: What are clinical psychology students learning? *Professional Psychology: Research and Practice*, 26, 514-522.
- DAVIS, D., THOMSON-O'BRIEN, M. A., FREEMANTLE, N., WOLF, F. M., MAZMANIAN, P., & TAYLOR-VAISEY, A. (1999). Impact of formal continuing medical education: Do conferences, workshops, rounds, and other traditional con-

- tinuing education activities change physician behavior or health care outcomes? *JAMA*, 282, 867-874.
- ELLIOTT, R. (1998). The editor's introduction: A guide to the empirically supported treatments controversy. *Psychotherapy Research*, 8, 115-125.
- ENNS, C. Z., CAMPBELL, J., COURTOIS, C. A., GOTTLIEB, M. C., LESE, K. P., GILBERT, M. S., & FORREST, L. (1998). Working with adult clients who may have experienced childhood abuse: Recommendations for assessment and practice. *Professional Psychology: Research and Practice*, 29, 245-256.
- FENSTERHEIM, H., & RAW, S. D. (1996). Psychotherapy research is not psychotherapy practice. *Clinical Psychology: Science and Practice*, 3, 168-171.
- FITZPATRICK, K. M., LAGORY, M. E., & RITCHEY, F. J. (1999). Dangerous places: Exposure to violence and its mental health consequences for the homeless. *American Journal of Orthopsychiatry*, 69, 438-447.
- FOA, E. B., & CAHILL, S. P. (2001). Psychological therapies: Emotional processing. In N. J. Smelser & P. B. Bates (Eds.), *International encyclopedia of the social and behavioral sciences* (pp. 12363-12369). Oxford, England: Elsevier.
- FOA, E. B., & CAHILL, S. P. (2002). Specialized treatment for PTSD: Matching survivors to the appropriate modality. In R. Yehuda (Ed.), *Treating trauma survivors with PTSD: Bridging the gap between intervention research and practice* (pp. 43-62). Washington, DC: American Psychiatric Press.
- FOA, E. B., DAVIDSON, J. R. T., & FRANCES, A. (1999). The expert consensus guideline series: Treatment of posttraumatic stress disorder. *Journal of Clinical Psychiatry*, 60, Supplement 16.
- FOA, E. B., KEANE, T. M., & FRIEDMAN, M. J. (2000). *Effective treatments for PTSD: Practice guidelines from the International Society for Traumatic Stress Studies*. New York: Guilford Press.
- FOA, E. B., & KOZAK, M. J. (1986). Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin*, 99, 20-35.
- FOA, E. B., & ROTHBAUM, B. O. (1998). *Treating the trauma of rape: A cognitive-behavioral therapy for PTSD*. New York: Guilford Press.
- FOA, E. B., ROTHBAUM, B. O., & FURR, J. M. (2003). Augmenting exposure therapy with other CBT procedures. *Psychiatric Annals*, 33, 47-53.
- FOA, E. B., ZOELLNER, L. A., FEENEY, N. C., HEMBREE, E. A., & ALVAREZ-CONRAD, J. (2002). Does imaginal exposure exacerbate PTSD symptoms? *Journal of Consulting and Clinical Psychology*, 70, 1022-1028.
- FONTANA, A., ROSENHECK, R., SPENCER, H., & GRAY, S. (2002). *The long journey home. X: Treatment of posttraumatic stress disorder in the Department of Veterans Affairs—Fiscal year 2001 service delivery and performance*. West Haven, CT: Northeast Program Evaluation Center, Department of Veterans Affairs.
- FOY, D. W., KAGAN, B., MCDERMOTT, C., LESKIN, G., SIPPRELLE, R. C., & PAZ, G. (1996). Practical parameters in the use of flooding for treating chronic PTSD. *Clinical Psychology and Psychotherapy*, 3, 169-175.
- FRUEH, B. C., MIRABELLA, R. F., & TURNER, S. M. (1995). Exposure therapy for combat-related PTSD: Some practical considerations regarding patient exclusion. *The Behavior Therapist*, 18, 190-191.
- GARFIELD, S. L. (1996). Some problems associated with "validated" forms of psychotherapy. *Clinical Psychology: Science and Practice*, 3, 218-229.
- GLYNN, S. M., ETH, S., RANDOLPH, E. T., FOY, D. W., URBANIS, M., BOXER, L., ET AL. (1999). A test of behavioral family therapy to augment exposure for combat-related posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology*, 67, 243-251.
- GONZALES, J. J., RINGEISEN, H. L., & CHAMBERS, D. A. (2002). The tangled and thorny path of science to practice: Tensions in interpreting and applying "evidence." *Clinical Psychology: Science and Practice*, 9, 204-209.
- HATGIS, C., ADDIS, M. E., KRASNOW, A. D., KHAZAN, I. Z., JACOB, K. L., CHIANCOLA, S., ET AL. (2001). Cross-fertilization versus transmission: Recommendations for developing a bidirectional approach to psychotherapy dissemination research. *Applied and Preventive Psychology*, 10, 37-49.
- HAYS, K. A., RARDIN, D. K., JARVIS, P. A., TAYLOR, N. M., MOORMAN, A. S., & ARMSTEAD, C. D. (2002). An exploratory survey on empirically supported treatments: Implications for internship training. *Professional Psychology: Research and Practice*, 33, 207-211.
- HEMBREE, E. A., FOA, E. B., DORFAN, N. M., STREET, G. P., TU, X., & KOWALSKI, J. (2003). Do patients drop out prematurely from exposure therapy for PTSD? *Journal of Traumatic Stress*, 16, 555-562.
- HEMBREE, E. A., RAUCH, S. M., & FOA, E. B. (2003). Beyond the manual: The insider's guide to prolonged exposure therapy for PTSD. *Cognitive and Behavioral Practice*, 10, 22-30.
- HENGGELE, S. W., & SCHOENWALD, S. K. (2002). Treatment manuals: Necessary, but far from sufficient. *Clinical Psychology: Science and Practice*, 9, 419-420.
- HOHMANN, A. A., & SHEAR, M. K. (2002). Community-based intervention research: Coping with the "noise" of real life in study design. *American Journal of Psychiatry*, 159, 201-207.
- JAYCOX, L. H., & FOA, E. B. (1996). Obstacles in implementing exposure therapy for PTSD: Case discussions and practical solutions. *Clinical Psychology and Psychotherapy: An International Journal of Theory and Practice*, 3, 176-184.
- JONES, L., HUGHES, M. J., & UNTERSTALLER, U. (2001). Posttraumatic stress disorder in victims of domestic violence: A review of the research. *Trauma, Violence, and Abuse: A Review Journal*, 2, 99-119.
- KESSLER, R. C., SONNEGA, A., BROMET, E., HUGHES, M., & NELSON, C. B. (1995). Posttraumatic stress disorder in the National Comorbidity Survey. *Archives of General Psychiatry*, 52, 1048-1060.
- KOVACS, A. L. (1996). Reflections on the practice directorate's data base project. *Psychotherapy Bulletin*, 31, 26-31.
- LINEHAN, M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. New York: Guilford Press.
- LITZ, B. (2002, November). The use of PE: Clinical decision making. Paper presented at the 18th Annual Meeting of the International Society for Traumatic Stress Studies, Baltimore, MD.
- MUESER, K. T., & GLYNN, S. M. (1995). *Behavioral family therapy for psychiatric disorders*. New York: Simon & Schuster.
- MUESER, K. T., TORREY, W., LYNDE, D., SINGER, P., & DRAKE, R. (2003). Implementing evidence-based practices for people with severe mental illness. *Behavior Modification*, 27, 387-411.

- NACASCH, N., COHEN-RAPPEROT, G., POLLIACK, M., KNOBLER, H. Y., ZOHAR, J., & FOA, E. B. (2003, April). *Prolonged exposure for PTSD: The dissemination and the preliminary results of the implementation of the treatment protocol in Israel*. Abstract in the Proceedings of the 11th Conference of the Israel Psychiatric Association, Haifa, Israel.
- NAJAVITS, L. M., WEISS, R. D., SHAW, S. R., & DIERBERGER, A. E. (2000). Psychotherapists' views of treatment manuals. *Professional Psychology: Research and Practice, 31*, 404-408.
- PERSONS, J. B., & SILBERSCHATZ, G. (1998). Are results of randomized controlled trials useful to psychotherapists? *Journal of Consulting and Clinical Psychology, 66*, 126-135.
- RIGGS, D. S., FOA, E. B., VOLPICELLI, J., RUKSTALIS, M., IMS, P., KALMANSON, D., & WHITE, L. (2003, November). *Treatment of PTSD and alcohol dependence concurrently: Preliminary findings*. Paper presented at the 19th Annual Meeting of the International Society for Traumatic Stress Studies, Chicago, IL.
- ROGERS, E. (1995). *Diffusion of innovations* (4th ed). New York: Free Press.
- ROSEN, C. S., CHOW, H. C., FINNEY, J. F., GREENBAUM, M. A., MOOS, R. H., SHEIKH, J. I., & YESAVAGE, J. A. (2004). Practice guidelines and VA practice patterns for treating posttraumatic stress disorder. *Journal of Traumatic Stress, 17*, 213-222.
- ROSENHECK, R. A. (2001). Organizational process: A missing link between research and practice. *Psychiatric Services, 52*, 1607-1612.
- ROTH, S. H., NEWMAN, E., PELCOVITZ, D., VAN DER KOLK, B. A., & MANDEL, F. S. (1997). Complex PTSD in victims exposed to sexual and physical abuse: Results from the DSM-IV Field Trial for posttraumatic stress disorder. *Journal of Traumatic Stress, 10*, 539-555.
- ROTHBAUM, B. O., MEADOWS, E. A., RESICK, P., & FOY, D. W. (2000). Cognitive-behavioral therapy. In E. B. Foa, T. M. Keane, & M. J. Friedman (Eds.), *Effective treatments for PTSD: Practice guidelines from the International Society for Traumatic Stress Studies* (pp. 60-83). New York: Guilford Press.
- ROTHBAUM, B. O., & SCHWARTZ, A. C. (2002). Exposure therapy for posttraumatic stress disorder. *American Journal of Psychotherapy, 56*, 59-75.
- SACKETT, D. L., RICHARDSON, W. S., ROSENBERG, W., & HAYNES, R. B. (1997). *Evidence-based medicine*. New York: Churchill Livingstone.
- SCHNURR, P. P., & GREEN, B. L. (2004). *Trauma and health: Physical health consequences of exposure to extreme stress*. Washington, DC: American Psychological Association.
- SCHULTE, D., KUNZEL, R., PEPPING, G., & SCHULTE-BAHRENBURG, T. (1992). Tailor-made versus standardized therapy of phobic patients. *Advances in Behavior Research and Therapy, 14*, 67-92.
- SELIGMAN, M. E. (1995). The effectiveness of psychotherapy. *American Psychologist, 50*, 965-974.
- SHALEV, A. Y., FRIEDMAN, M. J., FOA, E. B., & KEANE, T. M. (2000). Integration and summary. In E. B. Foa, T. M. Keane, & M. J. Friedman (Eds.), *Effective treatments for PTSD: Practice guidelines from the International Society for Traumatic Stress Studies* (pp. 359-379). New York: Guilford Press.
- SILVERMAN, W. H. (1996). Cookbooks, manuals, and paint-by-numbers: Psychotherapy in the 90s. *Psychotherapy, 33*, 207-215.
- TEN HAVE, T., COYNE, J. C., SALZER, M. S., & KATZ, I. (2003). Research to improve the quality of care for depression: Alternatives to the simple randomized clinical trial. *General Hospital Psychiatry, 25*, 115-123.
- TORREY, W. C., DRAKE, R. E., DIXON, L., BURNS, B. J., FLYNN, L., RUSH, A. J., ET AL. (2001). Implementing evidence-based practices for persons with severe mental illnesses. *Psychiatric Services, 52*, 45-50.
- YEN, S., SHEA, M. T., BATTLE, C. L., JOHNSON, D. M., ZLOTNICK, C., DOLAN-SEWELL, R., ET AL. (2002). Traumatic exposure and posttraumatic stress disorder in borderline, schizotypal, avoidant, and obsessive-compulsive personality disorders: Findings from the Collaborative Longitudinal Personality Disorders Study. *Journal of Nervous and Mental Disease, 190*, 510-518.
- ZAYFERT, C., BECKER, C. B., & GILLOCK, K. L. (2002). Managing obstacles to the utilization of exposure therapy with PTSD patients. In L. VandeCreek & T. L. Jackson (Eds.), *Innovations in clinical practice: A source book* (Vol. 20, pp. 201-222). Sarasota, FL: Professional Resource Press.
- ZLOTNICK, C., ZAKRISKI, A. L., SHEA, M. T., COSTELLO, E., BEGIN, A., PEARLSTEIN, T., & SIMPSON, E. (1996). The long-term sequelae of sexual abuse: Support for a complex posttraumatic stress disorder. *Journal of Traumatic Stress, 9*, 195-205.